ATTORNEY DOCKET NO.: KCX-1359 (18231)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application ERIC E. LENNON ET AL.	)	Examiner: P. BUTLER
Serial No.: 10/694,153	)	Art Unit: 1732
Filed: OCTOBER 27, 2003	)	Deposit Account: 04-1403
Confirmation No.: 3016	)	Customer No.: 22827

Title: METHOD AND APPARATUS FOR THE PRODUCTION OF NONWOVEN WEB MATERIALS

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Date of Deposit August 12, 2009

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Re: Appeal to the Board of Patent Appeals and Interferences

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Title: METHOD AND APPARATUS FOR THE PRODUCTION OF NONWOVEN WEB MATERIALS

1. ☐ **NOTICE OF APPEAL**: Pursuant to 37 CFR 41.31, Applicant hereby appeals to the Board of Appeals and interferences from the last decision of the Examiner.
2. ☐ **PRE-APPEAL BRIEF REQUEST FOR REVIEW**: Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The review is requested for the reason(s) stated on the attached sheet(s) [No more than five (5) pages may be provided.]
3. ☒ **BRIEF** on appeal in this application pursuant to 37 CFR 41.37 is transmitted herewith (1 copy).
4. ☐ An **ORAL HEARING** is respectfully requested under 37 CFR 41.47 (due within two months after Examiner's Answer).
5. ☐ Reply Brief under 37 CFR 41.41(b) is transmitted herewith (1 copy).
6. ☐ "Small entity" verified statement filed: [ ] herewith [ ] previously.
7. **FEE CALCULATION:**

	Fees
If box 1 above is X'd enter $ 540.00	$ 0.00
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PETITION is hereby made to extend the original due date of _____, hereby made for an extension to cover the date this response is filed for which the requisite fee is enclosed (1 month $130; 2 months $490; 3 months $1,110; 4 months $1,730, 5 months $2,350 $ 0.00

SUBTOTAL: $ 540.00

Less any previous extension fee paid since above original due date.	-	$ 0.00
Less any previous fee paid for prior Notice of Appeal since Board did not render a decision on the merits. MPEP § 1204.01	-	$ 0.00
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SUBTOTAL:		$ 540.00
If "small entity" verified statement filed ☐ previously, ☐ herewith, enter one-half (½) of subtotal and subtract	-	$ 0.00
TOTAL FEE ENCLOSED:		$ 540.00

☐ Fee enclosed.

☐ Charge fee to our Deposit Account/Order Nos. in the heading hereof (for which purpose one additional copy of this sheet is attached)

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☐ Fee NOT required since paid in prior appeal in which the Board of Appeals did not render a decision on the merits.

The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any fees in addition to the fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (deficiency only) now or hereafter relative to this application and the resulting official document under Rule 20, or credit any overpayment, to our Account No. shown in the heading hereof. This statement does not authorize charge of the issue fee in this case.

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Date: August 12, 2009

ATTORNEY DOCKET: KCX-1359 (18231)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application ERIC E. LENNON ET AL.	)	Examiner: Patrick Neal Butler
Serial No.: 10/694,153	)	Art Unit: 1732
Filed: October 27, 2003	)	Deposit Account: 04-1403
Confirmation No.: 3016	)	Customer No.: 22827

Title: UNIFORM NONWOVEN MATERIAL AND LAMINATE AND PROCESS THEREFOR

APPLICANTS' ORIGINAL APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with 37 CFR § 41.37, applicants hereby submit for the caption application this original appeal brief to the Final Office Action of March 3, 2009.

1. REAL PARTY IN INTEREST:

The real party in interest is Kimberly-Clark Worldwide, Inc., the owner of the entire right title and interest.

2. RELATED APPEALS AND INTERFERENCES:

None.

3. STATUS OF CLAIMS:

Applicant appeals the rejection of all of the non-allowed pending claims 1 – 5, 11, 13 – 16, and 23, which are under final rejection mailed on March 3, 2009. Claim 12 was cancelled. Claims 6 – 10 and 17 – 22 have been withdrawn from consideration.

4. STATUS OF AMENDMENTS:

Per the Advisory Action of June 2, 2009, the Response to Final Office Action electronically filed on May 14, 2009, has been entered and overcame the nonstatutory obviousness-type double patenting rejection of claims 1, 11 and 23 over claims 1, 5 and 11 of U.S. Patent No. 7,488,441 B2.

5. SUMMARY OF CLAIMED SUBJECT MATTER:

Independent claim 1:

As explained at page 10, lines 4 – 11 of applicants' specification, an embodiment of a method of making a nonwoven web is schematically shown in FIG. 1.

As schematically shown in FIG. 1 and explained at page 10, lines 13 – 16 of

applicants' specification, the method includes providing a plurality of fibers 60.

As schematically shown in FIG. 1 and explained at page 12, lines 8 – 20 of applicants' specification, the fibers 60 are subjected to a pneumatic attenuation force in a drawing slot 70, the attenuation force imparting a velocity to the fibers.

As schematically shown in FIG. 1 and explained at page 13, lines 5 – 15 of applicants' specification, the velocity of the fibers 60 is reduced in a diffusion chamber 80 that is spaced from an exit of the drawing slot in a direction of travel of the plurality of fibers 60, the diffusion chamber 80 being formed substantially between opposed diverging sidewalls 82, 84.

As schematically shown in FIG. 1 and explained at page 14, lines 17 – 21 of applicants' specification, the fibers 60 are subjected to an applied electrostatic charge before the fibers enter the diffusion chamber 80.

As schematically shown in FIG. 1 and explained at page 14, lines 17 – 22 and page 15, lines 1 – 5 and 22 – 24 of applicants' specification, the electrostatic charge is applied by two or more oppositely directed electrostatic charging units 76, 78.

As schematically shown in FIG. 2A and explained at page 15, lines 1 – 24 of applicants' specification, each charging unit 201 includes an emitter device 210 and a target device 230.

As schematically shown in FIG. 2B and explained at page 25, lines 1 – 18 of applicants' specification, at least one emitter device 210 is configured on each side of the fibers 60 so that an electrostatic charge is generated from opposite directions transverse to the direction of travel of the plurality of fibers 60.

As schematically shown in FIG. 1 and explained at page 17, lines 20 – 27 of applicants' specification, the fibers 100 are thereafter collected into a web on a moving forming surface 110.

Independent claim 11:

As explained at page 10, lines 4 – 11 of applicants' specification, an embodiment of a method of making a nonwoven web is schematically shown in FIG. 1.

As schematically shown in FIG. 1 and explained at page 10, lines 13 – 16 of applicants' specification, the method includes providing a plurality of fibers 60.

As schematically shown in FIG. 1 and explained at page 12, lines 8 – 20 of applicants' specification, the fibers 60 are subjected to a pneumatic attenuation force in a drawing slot 70, the attenuation force imparting a velocity to the fibers.

As schematically shown in FIG. 1 and explained at page 13, lines 5 – 15 of applicants' specification, the velocity of the fibers 60 is reduced in a diffusion chamber 80 that is spaced from an exit of the drawing slot in a direction of travel of the plurality of fibers 60, the diffusion chamber 80 being formed substantially between opposed diverging sidewalls 82, 84.

As schematically shown in FIG. 3 and explained at page 16, lines 3 – 19 of applicants' specification, the fibers 60 are subjected to and charged with an applied electrostatic charge while the fibers are in the diffusion chamber 300.

As schematically shown in FIG. 3 and explained at page 16, lines 13 – 27 of applicants' specification, the electrostatic charge is applied by two or more oppositely directed electrostatic charging units 312, 322 wherein at least one electrostatic charging unit 312 includes an emitter device located upon a first one of the diverging sidewalls

310 and a target device located on the opposite diverging wall 320 and a second electrostatic charging unit 322 includes a target device on the first one of the diverging sidewalls 310 and an emitter device on the opposite diverging sidewall 320 so that electrostatic charge is generated from opposite directions between the diverging sidewalls 310, 320 with respect to the direction of travel of the plurality of fibers through the diversion chamber 300.

As schematically shown in FIG. 1 and explained at page 17, lines 20 – 27 of applicants' specification, the fibers 100 are thereafter collected into a web on a moving forming surface 110.

Independent claim 23:

As explained at page 10, lines 4 – 11 of applicants' specification, an embodiment of a method of making a nonwoven web is schematically shown in FIG. 1.

As schematically shown in FIG. 1 and explained at page 10, lines 13 – 16 of applicants' specification, the method includes providing a plurality of fibers 60.

As schematically shown in FIG. 1 and explained at page 12, lines 8 – 20 of applicants' specification, the fibers 60 are subjected to a pneumatic attenuation force in a drawing slot 70, the attenuation force imparting a velocity to the fibers.

As schematically shown in FIG. 1 and explained at page 14, lines 17 – 27 and page 15, lines 1 – 5 of applicants' specification, the fibers 60 are subjected to an electrostatic charge that is applied by an electrostatic charging unit 76 or 78 located on one of the drawing slot sidewalls 72 or 74.

As schematically shown in FIG. 1 and explained at page 13, lines 5 – 15 of applicants' specification, the velocity of the fibers 60 is reduced in a diffusion chamber 80

that is formed substantially between opposed diverging sidewalls 82, 84.

As schematically shown in FIG. 1 and explained at page 17, lines 20 – 27 of applicants' specification, the fibers 100 are thereafter collected into a web on a moving forming surface 110.

As schematically shown in FIGs. 1 and 4 and explained at page 19, lines 10 – 27, page 20, lines 1 – 4 and 16 – 27 and page 21, lines 1 – 3 of applicants' specification, in one embodiment the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot from the drawing slot sidewall (410 in FIG. 4) opposing the drawing slot sidewall (420 in FIG. 4) upon which the electrostatic charging unit is located. Page 19, lines 19 – 21, of applicants' specification states in particular that high velocity air to attenuate the fibers can be admitted into the attenuation chamber from **either** of air plenums 414 and 424 (FIG. 4), **i.e., only one of these plenums**, **or both** of these plenums 414 and 424 (FIG. 4). Page 20, lines 23 – 25, of applicants' specification states in particular that it can be advantageous to utilize "attenuation air entering the fiber drawing unit **only** from the opposing sidewall of the attenuation chamber or fiber drawing slot." Emphasis added. Referring to FIG. 4, page 21, lines 2 – 3, of applicants' specification states in particular that "aspirating air may be supplied by **only** nozzle gap 416 in the opposing sidewall 410." Emphasis added. The original "wherein clause" of claim 23 in the application as originally filed stated (emphasis added):

> wherein the pneumatic attenuation force is provided by attenuation air entering the drawing slot **only** from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.

Applicants' January 2008 Amendment After Final added the following text between lines

24 and 26 of page 15 of applicants' specification (emphasis added):

> In one exemplary embodiment of a method of making a nonwoven web, the method comprises providing a plurality of fibers; subjecting the fibers to a pneumatic attenuation force in a drawing slot formed between opposed drawing slot sidewalls, the attenuation force imparting a velocity to the fibers; subjecting the fibers to an applied electrostatic charge, the electrostatic charge applied by an electrostatic charging unit located on one of the drawing slot sidewalls; reducing the velocity of the fibers in a diffusion chamber, the diffusion chamber being formed substantially between opposed diverging sidewalls; and thereafter collecting the fibers into a web on a moving forming surface. **In this exemplary embodiment, the pneumatic attenuation force is provided by attenuation air entering the drawing slot only from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.**

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL:

The final rejection of claim 23 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

The final rejection of claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 00/65134 A1; US Patent No. 6,966,762 B1) and Epstein et al (US Patent No. 3,052,009).

The final rejection of claim 2 under 35 U.S.C. § 103(a) as unpatentable over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Trimble (WO 93/21370).

The final rejection of claims 4 and 5 under 35 U.S.C. § 103(a) as unpatentable over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379 (USP 6,117,379).

The final rejection of claim 11 under 35 U.S.C. 103(a) as unpatentable over Maggio '381 in view of Haynes '071 and Epstein et al.

The final rejection of claims 11 and15 under 35 U.S.C. § 103(a) as unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1) in view of Epstein et al.

The final rejection of claim 13 under 35 U.S.C. § 103(a) as unpatentable over Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11, and further in view of Trimble.

The final rejection of claim 13 under 35 U.S.C. § 103(a) as unpatentable over Schmit (WO 02/244990 A1; USPAP 2004/0028763 A1) in view of Epstein et al as applied to claim 11, and further in view of Trimble.

The final rejection of claim 14 under 35 U.S.C. § 103(a) as unpatentable over Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11 and further in view of Haynes '379 (USP 6,117,379).

The final rejection of claim 14 under 35 U.S.C. § 103(a) as unpatentable over Schmit and Epstein et al as applied to claim 11 and further in view of Haynes '379.

The final rejection of claim 16 under 35 U.S.C. § 103(a) as unpatentable over Schmit and Epstein et al as applied to claim 11 and further in view of Haynes '379.

The final rejection of claim 23 under 35 U.S.C. § 103(a) as unpatentable over Maggio '134 in view of Davis et al (USP 6,660,218 B2).

7. ARGUMENT:

This is now the second time that applicants have taken these same claims before the Board on appeal. Even with the benefit of hindsight access to applicants'

disclosure, independent claims 1 and 23 have been rejected as obvious in five consecutive Office Actions. Applicants also respectfully submit that if the rejection of claim 23 under section 112 is sustained, then the Board would seem to be making new law.

A. Claim 23 complies with the written description requirement of 35 U.S.C. 112, first paragraph.

With respect to claim 23, page 2 of the March 2009 Final Office Action contends (emphasis added):

> the claim requires the force of attenuation to be provided "air consisting of attenuation air only entering . . . from the drawing slot sidewall." The Examiner interprets this claim language to mean that no other attenuation air may contribute to the attenuation force. The Specification's teaching is limited to requiring that some air come from only the opposing sidewall (see **Specification, page 20, lines 24 and 25**). Since Claim 23 does preclude additional attenuation air, **the Specification does not preclude additional attenuation air**, the claim is therefore beyond the scope of the originally filed Specification.

The flaw in the above position of the Final Office Action is the failure to take into account the full breadth of the disclosure of applicants' specification. The chart on page 3 of the Final Office Action limits the support for claim 23 in applicants' specification to lines 24 and 25 on page 20 of applicants' specification. However, in accordance with 35 U.S.C. § 112, first paragraph, the originally filed claims also constitute part of the written description of the invention from which claim 23 can draw written description support.

The original "wherein clause" of claim 23 in the application as originally filed stated (emphasis added):

> wherein the pneumatic attenuation force is provided by attenuation air entering the drawing slot **only** from the drawing slot sidewall opposing the drawing slot sidewall

upon which the electrostatic charging unit is located.

Reducing this disclosure to a shorthand notation for the sake of simplifying the comparison that is to be performed, this disclosure says that attenuation air enters "**only** from X." The "wherein clause" language in amended claim 23 is as follows (with the changes identified by underlining the additions and lining through the deletions):

> wherein the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot ~~only~~ from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.

Reducing this amended claim language to a shorthand notation for the sake of simplifying the comparison that is to be performed, this claim language says that attenuation air enters "**only** from X."

Thus, the present version of the "wherein clause" in claim 23 does not differ substantively from the original language in claim 23. Since the originally filed claim 23 was directed to this embodiment, it is respectfully submitted that the written description adequately apprised the person of ordinary skill that the applicants had possession of the embodiment described by claim 23.

But the Final Office Action says that this showing does not suffice. For the penultimate sentence on page 2 of the Final Office Action has one further complaint based on the following contention (emphasis added):

> Even if the specification is held to indicate only one sidewall providing attenuation air, **the specification does not preclude any other source of attenuation air** as claimed with the closed claim language of "consisting."

Yet applicants already have demonstrated above that the specification says that attenuation air enters **only** from one place, which if expressed in the same shorthand

notation introduced above would read "**only** from X." However, in order to find claim 23 non-compliant with the written description requirement, the Final Office Action apparently would read "only from one place" in applicants' specification as meaning "only from more than one place." In other words, the Final Office Action apparently would read "**only** from X" in applicants' specification as if it meant "**only** from X + Y."

The Office has long forbidden applicants from reading limitations from the specification into the claim. But here the Final Office Action appears to want the Board to sanction allowing the Office to add text to applicants' specification in order to sustain this Section 112 rejection. The Final Office Action appears to want add to applicants' specification, description that is not there (namely, attenuation air entering from Y in addition to air entering from X).

The position taken in the Final Office Action is tantamount to finding non-compliance with 112, first paragraph, because applicants' specification fails to contain a statement to the effect that "by 'only' is meant that no air can come from anywhere except the opposing sidewall." Taking the other side of this coin, it is as if the Final Office Action is finding non-compliance with 112, first paragraph, because the Final Office Action is reading into applicants' specification that "some [attenuation] air comes from places other than only the opposing sidewall." Applicants respectfully submit that if the Office is permitted such liberties with applicants' specification, then all applicants will find themselves at the mercy of arbitrary and capricious rejections under Section 112, first paragraph. Applicants further respectfully submit that if the Board sanctions this practice for rejecting applicants' claim 23 as non-compliant with the written description requirement, then the Board would seem to be making new law.

Moreover, since the "wherein clause" of the originally filed claim 23 provides part of the written description of the invention, applicants have amended the specification in order to expressly state the language that was in original claim 23. Applicants' January 2008 Amendment After Final added the following text between lines 24 and 26 of page 15 of applicants' specification (emphasis added):

> In one exemplary embodiment of a method of making a nonwoven web, the method comprises providing a plurality of fibers; subjecting the fibers to a pneumatic attenuation force in a drawing slot formed between opposed drawing slot sidewalls, the attenuation force imparting a velocity to the fibers; subjecting the fibers to an applied electrostatic charge, the electrostatic charge applied by an electrostatic charging unit located on one of the drawing slot sidewalls; reducing the velocity of the fibers in a diffusion chamber, the diffusion chamber being formed substantially between opposed diverging sidewalls; and thereafter collecting the fibers into a web on a moving forming surface. **In this exemplary embodiment, the pneumatic attenuation force is provided by attenuation air entering the drawing slot only from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.**

Per paragraph 7 of the January 2008 Advisory Action, ***this amendment was entered*** for purposes of appeal.

Additionally, page 6 of applicants' June 2008 Appeal Brief provided the following basis for the wherein clause of claim 23 now in question (emphasis in original):

> As schematically shown in FIGs. 1 and 4 and explained at page 19, lines 10 – 27, page 20, lines 1 – 4 and 16 – 27 and page 21, lines 1 – 3 of applicants' specification, in one embodiment the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot from the drawing slot sidewall (410 in FIG. 4) opposing the drawing slot sidewall (420 in FIG. 4) upon which the electrostatic charging unit is located. Page 19, lines 19 – 21, of applicants' specification states in particular that high velocity air to attenuate the fibers can be admitted into the

> attenuation chamber from either of air plenums 414 and 424 (FIG. 4), **i.e., only one of these plenums**, or both of these plenums 414 and 424 (FIG. 4). Page 20, lines 23 – 25, of applicants' specification states in particular that it can be advantageous to utilize "attenuation air entering the fiber drawing unit **only** from the opposing sidewall of the attenuation chamber or fiber drawing slot." Emphasis added. Referring to FIG. 4, page 21, lines 2 – 3, of applicants' specification states in particular that "aspirating air may be supplied by **only** nozzle gap 416 in the opposing sidewall 410." Emphasis added.

As noted above, referring to applicants' specification, the March 2009 Final Office Action states: "The specification does not preclude additional attenuation air from being present." The March 2009 Final Office Action further contends that "the specification does not preclude any other source of attenuation air as claimed with the closed claim language of consisting." However, these comments seem to ignore the fact that claim 23 speaks only of the attenuation air that provides the pneumatic force to the fibers. The relevant language of claim 23 is "wherein the **pneumatic attenuation force** is provided by air consisting of * * * ."

In view of the above-identified portions of applicants' disclosure (FIGs. 1 and 4; page 19, lines 10 – 27, page 20, lines 1 – 4 and 16 – 27 and page 21, lines 1 – 3; and original claim 23), applicants respectfully submit that the person of ordinary skill was placed in possession of an embodiment in which the pneumatic attenuation force is provided by attenuation air entering the drawing slot **only** from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.

Accordingly, applicants respectfully submit that claim 23 satisfies the written description requirement of 35 U.S.C. § 112, first paragraph.

B. Claims 1 and 3 are patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al.

The method of making a nonwoven web as called for in claim 1 includes the step of providing a plurality of fibers and the step of subjecting the fibers to a pneumatic attenuation force in a drawing slot. The velocity of the fibers is reduced in a diffusion chamber that is spaced from an exit of the drawing slot in the direction of travel of the fibers. The diffusion chamber is formed substantially between opposed diverging side walls. The fibers are subjected to an applied electrostatic charge before the fibers enter the diffusion chamber. The electrostatic charge is applied by two or more oppositely directed electrostatic charging units. Each of these electrostatic charging units includes an emitter device and a "target" or collector device and are "oppositely directed," i.e., with at least one emitter device on each opposite side of the fibers so that an electrostatic charge is generated from opposite directions across the traveling path of the plurality of fibers. The fibers are then collected into a web on a moving forming surface.

Haynes '071 describes and illustrates a single charging unit within the fiber draw unit that includes rows 20 of emitter pins that produce a corona discharge against the target electrodes 22. As shown in Fig. 3 of Maggio '134, Maggio '134 has a rail 11 to electrostatically charge the filaments disposed only on one side of the filament path. Nor does Maggio '134 disclose more than one electrostatic charging unit in the diffusion chamber. Neither Haynes '071 nor Maggio '134 discloses or suggests the use of a second one of these charging units oppositely oriented such that the pins 20 of the second charging unit would be on the opposite side of the fibers than the pins 20 of the first charging unit.

As admitted on page 5 of the March 2009 Final Office Action, the obviousness rejection based on the combination of Haynes '071 and Maggio '134 lacks an essential feature of claim 1, namely, that the electrostatic charge is applied by two or more **oppositely** directed electrostatic charging units such that at least one emitter device from at least one charging unit is configured on each **opposite** side of the fibers so that the electrostatic charge is generated from **opposite directions** with respect to the direction of travel of the fibers.

In an attempt to overcome this deficiency, pages 5 – 6 of the March 2009 Final Office Action contend (emphasis added):

> **Epstein** teaches alternating the electrostatic charge from one side to another and back to the first side material (two or more **oppositely** directed electrostatic charging units such that **at least one emitter device** is configured on each side of the **fibers** so that an **electrostatic charge** is generated from **opposite** directions transverse to the direction of travel of the **plurality of fibers**.) (**See figs. 7 and 8**), and further that the particular placement and arrangement of electrodes is familiar to the ordinary artisan (see col. 3, lines 39-44).

But claim 1 requires at least two electrostatic charging units positioned in an arrangement that is much different than Epstein et al discloses in FIGs. 6, 7 and 8. Epstein et al column 3, lines 31 – 38, explains (emphasis added):

> **FIGS. 6 and 7 illustrate a circular type of electrode structure with three electrodes 15, 16, 17 arranged symmetrically around, and longitudinally staggered along**, filament 1. Similarly, **staggered or 120°** – phase displaced pulses are applied to **electrodes 15, 16 and 17** respectively as apparent from FIG. 8. As a result, helically shaped crimps will be obtained, as illustrated schematically in FIG. 9.

Thus, no two of the Epstein et al electrodes 15, 16, 17 are **opposite** one another in the

sense required by applicants' claim 1.

Applicants' claim 1 requires (emphasis added):

> the electrostatic charge is applied by two or more **oppositely directed electrostatic charging units** with each charging unit including an emitter device and a target device such that at least one emitter device is configured on each side of the fibers so that an electrostatic charge is generated from **opposite directions** transverse to the direction of travel of the plurality of fibers;

Thus, each of the electrostatic charging units in claim 1 has one of its **opposed** components (emitter or target) on the same wall where the other electrostatic charging unit has its other (target or emitter) component. Accordingly, each **opposed** wall has an emitter from one electrostatic charging unit and a target from the other electrostatic charging unit. Per applicants' claim 1, the **opposed** components of both electrostatic charging units are separated by **180 degrees**, i.e., they are **opposite** one another.

However, the separation between electrodes 15, 16, 17 in the arrangement disclosed in Epstein et al FIG. 6 is **120 degrees**, and there are **no opposed** targets. The separation between electrodes 15, 16, 17 in the arrangement disclosed in Epstein et al FIG. 7 is linear, and there are **no opposed** targets. There are no Epstein et al electrodes disposed in an **opposing** or **opposite** (**180 degrees**) arrangement as required by applicants' claim 1.

Another deficiency in the March 2009 Final Office Action is the following contention in the first full paragraph on page 6 thereof (emphasis added):

> It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to **incorporate the method of Epstein into that of Haynes in order to provide the ability to vary the crimping** to attain greater softness (Epstein, 3: 3-6) into fabrics of Haynes '071, which are meant to touch the skin, such as socks (see

Haynes '071, page 12, line 10).

Here the Final Office Action seems to suggest that one skilled in the art would incorporate Epstein et al into Haynes '071 so as "to vary the crimping to attain greater softness." However, applicants respectfully point out why it would appear unreasonable for the person of ordinary skill to pursue this suggestion.

Haynes '071 employs electrostatic charging units ***in a web forming process*** to charge individual fibers moving **en masse** in a streaming volume of fibers and make the individual fibers in the mass repel one another and thus separate the fibers and impose a preferential orientation of the fibers while the fibers are still being attenuated in the drawing slot. As explained for example at Haynes '071 page 1, lines 15 – 17 (emphasis added):

> the controlled application of **electrostatics provides separation of the fibers** or filaments and **directional distribution on the forming surface** to result in webs with desired preferential orientation and resulting web properties.

On the other hand, the Epstein et al process is a completely different animal than the Haynes '071 process. The Epstein et al process does not operate on "fibers" or "a plurality of fibers" as the Final Office Action contends, but rather on a solitary fiber. Epstein et al does not employ an electrostatic charging unit to charge "fibers" or "a plurality of fibers". Epstein et al does not employ an electrostatic charging unit to charge "fibers" or "a plurality of fibers" in a drawing slot where the fibers are attenuated. Epstein et al does not employ an electrostatic charging unit ***in a web forming process.*** Epstein et al does not employ an electrostatic charging unit to charge individual fibers moving **en masse** in a streaming volume of fibers. Epstein et al does

not employ an electrostatic charging unit to make the individual fibers in the mass repel one another and thus separate the fibers. Epstein et al does not employ an electrostatic charging unit to impose a preferential orientation of the fibers while the fibers are still being attenuated in the drawing slot. The Epstein et al process does not employ pneumatic attenuation to attenuate fibers. The Epstein et al process does not employ pneumatic attenuation to impart velocity to fibers.

Epstein et al relates merely to a method and apparatus for crimping a continuously running **solitary filament** 1. Epstein et al's teaching that use of multiple electrodes results in ***crimping of a solitary filament, is a teaching that is contrary to the explicit purpose of the single charging unit utilized in Haynes '071,*** namely, to achieve ***separation of multiple fibers moving en masse and a desired directional distribution on the web forming surface, of these multiple separated fibers.*** What Epstein et al's teaching suggests to Haynes '071 is that if multiple electrodes are employed as Epstein et al's teaching suggests, then crimping is going to occur. If multiple fibers moving en masse as in Haynes '071 were subjected to Epstein et al's crimping as suggested by the Final Office Action, then entanglement of the fibers would be inevitable. Thus, the separation and directional objectives of Haynes '071 cannot be achieved if the fibers are individually crimped by multiple electrodes per Epstein et al prior to depositing the fibers on the forming surface to make a web. Accordingly, based on Epstein et al's teaching, the person of ordinary skill would avoid adding multiple electrodes to the Haynes '071 method.

It is well settled that a combination or modification of references that directly contradicts the intended purpose of the primary reference (in this case Haynes ' 071) is

improper. M.P.E. P. § 2143.01 states:

> If [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

The March 2009 Final Office Action relies on Epstein et al in a manner that impermissibly ignores the fact that Epstein et al's teaching of crimping of fibers when multiple electrodes are employed would be rejected by Haynes ' 071 because it would be contrary to the stated objectives of Haynes '071 to separate the fibers and impose a "desired directional distribution on the web forming surface." Crimping the fibers would ensure their entanglement and destroy their directional attributes. In other words, Epstein et al would defeat two main objectives of Haynes '071. Applicants respectfully submit that the person of ordinary skill would not sacrifice two main objectives of Haynes '071 for the possibility (and by no means a certainty) of achieving a secondary objective concerning softness that might result from Epstein et al's filament crimping.

Moreover, Epstein et al's suggested use of multiple electrodes is limited to the very specific and precisely oriented single filament moving between a pair of take-off rollers 2 and a pair of take-up rollers 3 at a precise speed and under a precise tension. Epstein et al column 1, lines 61 – 66. The single filament 1 must be oriented at a precise location with respect to the electrodes and moving at a precise speed, which is controlled by the rollers 2, 3 that are contacting the filament 1 to maintain the filament 1 under precise tension. As stated at Epstein et al column 2, lines 23 – 27 (emphasis added):

> It is also **required in accordance with the invention**, to **maintain filament 1** at the point of crimping **under a predetermined tension** which, in the present

> example, was maintained for a 60 denier filament of Nylon 6 at approximately 10 grams.

Applicants respectfully submit that the person of ordinary skill realizes that such precise conditions do not pertain to a web forming process like either Haynes '071 or Maggio '134, which involve masses of individual fibers moving in a streaming volume of air in which the fibers are repelling one another.

Additionally, the structure disclosed in Epstein et al is not up to the task attributed to it by the March 2009 Final Office Action. For the electrodes in Epstein et al do not generate electrostatic charges that will attach to the fibers. The Epstein et al electrodes merely attract in a particular direction, a fiber that already has a charge.

Epstein et al has nothing useful to teach the person of ordinary skill about arranging multiple electrostatic charging units to apply electrostatic charge to each of a plurality of fibers moving together en masse in order to cause individual fibers to separate from each other before all of the separated fibers are arranged in a desired directional distribution before being collected on a moving forming surface to form a web. Indeed, Epstein et al's teaching that multiple electrodes are employed to crimp individual fibers, is contrary to the explicit objectives of Haynes '071.

Applicants therefore respectfully submit that claims 1 and 3 are patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al.

C. Claim 2 is patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Trimble.

Trimble fails to correct the deficiency noted above in Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1. As per Trimble, page 15, lines 15 – 23 and Figs. 3 and 6, Trimble fails to dispose the pins 72 of any emitters on opposite

sides of the fiber stream. Indeed, because this same deficiency is attributable to Haynes '071, Maggio '134 and Trimble, this fact evidences more strongly than ever that disposing electrostatic charge emitters on opposite sides of the stream of a plurality of fibers moving en masse was not appreciated by persons of ordinary skill in this art. As noted above in Section B of this appeal brief, Epstein et al's teaching fails to contradict this conclusion.

Moreover, the first paragraph on page 7 of the March 2009 Final Office Action attempts to justify combining Trimble's charging units with Haynes '071, Maggio '134 and Epstein et al, because (emphasis added):

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Haynes '071's and Maggio '134's non-woven web forming process in order to form a **more even distribution of filaments in the web** (see Trimble, page 20, lines 14-16) and because it is an **alternative embodiment** of a known charging unit configuration.

However, the assertion that combining Trimble's charging units with Haynes '071, Maggio '134 and Epstein et al would produce a more even distribution of filaments in the web cannot be supported in the face of the crimping and entangling effects of Epstein et al. They work at cross purposes.

The second basis for justifying combining Trimble's staggered charging unit positions with Haynes '071, Maggio '134 and Epstein et al would appear to be merely because that combination would be an **alternative embodiment** to the arrangement of Haynes '071, Maggio '134 and Epstein et al alone. However, this second basis finds no support in any decision or statute. Moreover, if this second basis were to provide adequate support for sustaining a Section 103(a) rejection, then no dependent claim

would escape the charge of obviousness. For the addition of an element to a dependent claim always results in an **alternative embodiment**, and the addition of any secondary prior art reference describing that element would always be deemed a permissible combination that renders the dependent claim obvious.

Applicants therefore respectfully submit that claim 2 is patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Trimble.

D. Claims 4 and 5 are patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379.

Haynes '379 does not overcome the deficiency in the combination of Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1. Haynes '379 does not provide an electrostatic charge emitter on each opposite side of a stream of fibers for the purpose of improving the degree of separation of the fibers or imposing a preferential orientation on the fibers. Applicants therefore respectfully submit that claims 4 and 5 are patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379 for this first reason.

1. Claim 4 is patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379.

Claim 4 requires the **pneumatic attenuation force** to be provided by **perturbed attenuation air**. As shown in Fig. 1 and explained in paragraph 0029 on page 4 of applicants' published application (US 2005/0087287) (emphasis added):

> A **fiber drawing unit** or aspirator 70 to receive the quenched curtain or bundle of fibers is **positioned below**

the spinneret 50 and the **quench blower 64**.

The specific contentions in the last two paragraphs of page 7 of the March 2009 Final Office Action are that (emphasis added):

> Haynes '379 teaches using a **bar arrangement 10 in front of airflow, which causes turbulent** (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).
>
> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine **Haynes '379's bar arrangement in front of the air flow of the drawing chambers** 16 of Haynes '071 and Maggio '134 **in order to quench or cool** via better penetration of the gas among the filaments (see Haynes '379, col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

Haynes '379 does not supply this missing element to the Haynes '071 arrangement. For the Haynes '379 patent pertains to rendering the **quenching air** turbulent. Haynes '379 col. 5, lines 18-27 states (emphasis added):

> The bars 12 are preferably substantially parallel to each other, and are preferably positioned substantially perpendicular to the direction of travel of nonwoven filaments **being quenched**.

The Haynes '379 patent does not pertain to rendering turbulent the **pneumatic attenuation air**, which is what is required by claim 4. The quenching or cooling of the fibers is intended to remove heat. In contrast to the quenching air, the attenuation air draws the lengths of the fibers to reduce the diameters of the fibers as the fibers lengthen. Thus, Haynes '379 has no applicability to perturbing attenuation air that supplies the pneumatic attenuation force as required by applicants' claim 4.

Additionally, to the person of ordinary skill, applying the Haynes '379 teaching of a bar arrangement 10 in order to cause turbulent gas flow in Haynes '071's method

would seem likely to preclude the achievement of the Haynes '071 objective of imposing a "desired directional distribution on the web forming surface." For turbulence and orderliness would appear mutually exclusive to the person of ordinary skill. This apparent contradiction is all the more reason for concluding that the method of applicants' claim 4 is non-obvious to the person of ordinary skill. And as noted above, a combination or modification of references that directly contradicts the intended purpose of the primary reference (in this case Haynes ' 071) is improper. M.P.E. P. § 2143.01.

Applicants therefore respectfully submit that this additional reason supports the patentability of claim 4 under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379.

2. Claim 5 is patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379.

As regards claim 5 in particular, Haynes '379 does not say anything about making a **diverging** sidewall become a **vortex generator**. Haynes '379 FIG. 3 shows the vortex generating bar arrangements 10 as converging rather than diverging. This additional deficiency supports applicants' contention that claim 5 is patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, and further in view of Haynes '379.

E. Claim 11 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Epstein et al.

Independent claim 11 calls for subjecting the fibers to, and charging the fibers with, an applied electrostatic charge while the fibers are in the diffusion chamber. The charge is applied by two or more oppositely directed electrostatic charging units wherein an emitter device of at least one of the units is located upon a first one of the diverging

sidewalls in the diffusion chamber. A target device for at least another of the electrostatic charging units also is located on that same first one of the diverging sidewalls. Thus, with this arrangement, the electrostatic charge is generated from opposite directions by the oppositely directed charging units between the diverging side walls with respect to the direction of travel of the plurality of fibers through the diverging chamber.

Maggio '381 (U.S. 6,974,316) FIG. 2 has one electrostatic device 17 disposed on one of the diverging sidewalls 15 in the diffuser 6. The deficiencies in Maggio '134, Haynes '071 and Epstein et al have been discussed above, and they remain if Maggio '381 is substituted for Maggio '134. Neither Maggio '381 nor Haynes '071 places emitters on opposite diverging walls of the diffusion chamber. And for reasons explained above in Section B of this appeal brief, Epstein et al fails to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite sidewalls of the Maggio '381 diffusion chamber any more so than on opposite sidewalls of the Haynes '071 drawing slot.

The last paragraph on page 9 of the March 2009 Final Office Action contends (emphasis added):

> Epstein teaches alternating the electrostatic charge **from one side to another and back to the first side** material (having two or more oppositely directed electrostatic charging units such that at least one emitter device is configured on each side of **the fibers** so that an electrostatic charge is generated **from opposite directions** transverse to the direction of travel of the **plurality of fibers**) (**see Figs. 7 and 8**), and further that the particular placement and arrangement of electrodes is familiar to the ordinary artisan (see **col. 3, lines 39-44**).

But claim 11 requires at least two electrostatic charging units positioned in an

arrangement that is much different than Epstein et al discloses in Figs. 7 and 8. No two of the Epstein et al electrodes 15, 16, 17 are **opposite** one another in the sense required by applicants' claim 11, which requires (emphasis added):

> at least one electrostatic charging unit includes an emitter device located upon a first one of the diverging sidewalls and a target device located on the **opposite diverging wall** and a second electrostatic charging unit includes a target device on the first one of the diverging sidewalls and an emitter device on the **opposite diverging sidewall** so that electrostatic charge is generated from **opposite directions** between the diverging sidewalls

Thus, each of the electrostatic charging units in claim 11 has one of its **opposed** components (emitter or target) on the same wall where the other electrostatic charging unit has its other (target or emitter) component. Accordingly, each **opposed** wall has an emitter from one electrostatic charging unit and a target from the other electrostatic charging unit. The **opposed** components of both electrostatic charging units are separated by **180 degrees**, i.e., they are **opposite** one another.

However, as quoted above from Epstein et al column 3, lines 31 – 38, the separation between electrodes 15, 16, 17 in the arrangement disclosed in Epstein et al FIG. 6 is **120 degrees**, and there are **no opposed** targets. The separation between electrodes 15, 16, 17 in the arrangement disclosed in Epstein et al FIG. 7 is linear, and there are **no opposed** targets. There are no Epstein et al electrodes disposed in an **opposing** or **opposite** (**180 degrees**) arrangement as required by applicants' claim 11.

Additionally, Epstein et al col. 3, lines 39-44 merely states (emphasis added):

> The production and application of electrical pulses of the shape indicated in FIGS. 3*a* and 3*b* and FIG. 8, and of any other pulses or pulse shapes **appropriate for the invention**, are well-known as well as the shaping and arranging of electrodes and electrode systems, which is also

familiar to any cathode ray tube engineer.

The "invention" in the phrase **appropriate for the invention**, refers to the Epstein et al invention. However, the Epstein et al invention fails to pertain to placement of any electrostatic charging unit in a diffusion chamber. And as already explained above in Section B of this appeal brief, the Epstein et al process does not operate on "fibers" or "a plurality of fibers" as the Final Office Action contends, but rather on a solitary fiber. Epstein et al does not employ an electrostatic charging unit (with emitter and target) to charge "fibers" or "a plurality of fibers". Epstein et al does not employ an electrostatic charging unit to charge "fibers" or "a plurality of fibers" in a diffusion chamber with opposed diverging sidewalls. Epstein et al does not employ an electrostatic charging unit ***in a web forming process.*** Epstein et al does not employ an electrostatic charging unit to charge individual fibers moving **en masse** in a streaming volume of fibers. Epstein et al does not employ an electrostatic charging unit to make the individual fibers in the mass repel one another and thus separate one fiber from another fiber. The Epstein et al process does not employ pneumatic attenuation to attenuate fibers before subjecting them to multiple electrostatic charging units. The Epstein et al process does not employ pneumatic attenuation to impart velocity to fibers before subjecting them to multiple electrostatic charging units.

The first paragraph on page 10 of the March 2009 Final Office Action contends (emphasis added):

> It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention **to incorporate the method of Epstein into that of Maggio '381 in order to provide the ability to vary the crimp** to produce greater softness (Epstein, 3:3-6).

The Final Office Action seems to suggest that one skilled in the art would incorporate Epstein et al into Maggio '381 so as to vary the crimping to attain greater softness. However, applicants point out why it would appear illogical for the person of ordinary skill to pursue this suggestion.

Maggio '381 and Haynes '071 employ electrostatic charging units ***in a web forming process*** to charge individual fibers moving **en masse** in a streaming volume of fibers and make the individual fibers in the mass repel one another and thus separate one fiber from another fiber. The purpose of the diffusion chamber in methods to which Maggio '381 pertains is explained at Maggio '381 column 1, lines 29 – 36 of USP 6,974,316 (emphasis added):

> Beneath this slot attenuator for attenuating the filaments of the curtain is the diffuser, which is **intended to spread out the incoming curtain**. Since the diffuser diverges or is flared downward, the curtain that passes through it **progressively spreads out** as it falls. The web that thus forms on the collecting conveyor placed beneath the diffuser should be **more uniform**.

For reasons explained above in Section B of this appeal brief, employing Epstein et al crimping in a method of Maggio '381 and/or Haynes '071 does more harm than good and thus would not be pursued by the person of ordinary skill.

Epstein et al's ***crimping of a continuously running solitary filament 1 is contrary to the purpose of the charging units utilized in Maggio '381 and Haynes '071,*** namely, to achieve ***separation and spreading out of multiple fibers and a desired directional distribution of these multiple spread out fibers on the web forming surface.*** If multiple fibers moving en masse as in Maggio '381 and Haynes '071 were subjected to Epstein et al's crimping as suggested by the Final Office Action,

then entanglement would be inevitable and progressive spreading out would be defeated. Thus, the spreading out and uniform web objectives of Maggio '381 and Haynes '071 for the fibers moving en masse through the diffusion chamber before being deposited on the forming surface in a web that is more uniform, cannot be achieved if the fibers are individually crimped in the diffusion chamber.

As noted above, Epstein et al's suggested use of multiple electrodes is limited to the very specific and precisely oriented single filament moving between a pair of take-off rollers 2 and a pair of take-up rollers 3 at a precise speed and under a precise tension. Epstein et al column 1, lines 61 – 66. The single filament 1 must be oriented at a precise location with respect to the electrodes and moving at a precise speed, which is controlled by the rollers 2, 3 that are contacting the filament 1 to maintain the filament 1 under precise tension. As stated at Epstein et al column 2, lines 23 – 27 (emphasis added):

> It is also **required in accordance with the invention**, to **maintain filament 1** at the point of crimping **under a predetermined tension** which, in the present example, was maintained for a 60 denier filament of Nylon 6 at approximately 10 grams.

As explained at Epstein et al's column 2, lines (emphasis added):

> **In accordance with the invention**, crimping or deformation of filament 1 in a direction substantially perpendicular to its longitudinal extension is effected by causing filament 1 to pass between a pair of ring-shaped electrodes 5, 6 to which electric field pulses are applied by a **voltage determined by the distance between the electrodes** and, therefore, **between electrodes and filament** and also **depending on the thickness, speed, tension and electrical and mechanical structure of the filament 1** itself.

These conditions required by the Epstein et al process are not present and

cannot be induced in either Maggio '381 or Haynes '071. As noted above at Maggio '381 column 1, lines 29 – 36, the filaments in the diffuser are spreading out. The person of ordinary skill realizes that such precise conditions in the Epstein et al process do not pertain to the web forming process of either Maggio '381 or Haynes '071, which involve masses of individual fibers moving in a streaming volume in which the fibers are repelling one another.

Additionally, the structure disclosed in Epstein et al is not up to the task attributed to it by the March 2009 Final Office Action. For the electrodes in Epstein et al do not generate electrostatic charges that will attach to the fibers. The Epstein et al electrodes merely attract in a particular direction, a single filament that already has a charge.

Applicants therefore respectfully submit that claim 11 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Epstein et al.

F. Claims 11 and 15 are patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al.

Schmit (U.S. Pub. No. 2004/0028763) resembles Maggio '381 (they have identical FIGs. 1 and 2) insofar as each discloses an arrangement wherein a single charging unit is configured within the diffusion chamber. In particular, referring to Schmit FIGs. 2 and 3, the electrode needles 11 and the target electrode or plate 8 constitute a **single** charging unit. Thus, as acknowledged in the March 2009 Final Office Action, Schmit elements 11 and 8 do not satisfy the requirements of claim 11 calling for **two** such charging units to be **oppositely disposed**. Moreover, Schmit adds no more than does Maggio '381 and Haynes '071, and thus Schmit in combination with Epstein et al continues to suffer from the deficiency noted above in Section 7E of this appeal brief. The combination of Schmit with Epstein et al fails to disclose or suggest to

the person of ordinary skill, the placement of at least two emitters of electrostatic charges on opposite diverging sidewalls and opposing targets on opposite diverging sidewalls to apply electrostatic charges to fibers moving in a stream of a plurality of fibers.

The first paragraph on page 11 of the March 2009 Final Office Action contends (emphasis added):

> Epstein teaches alternating the electrostatic charge **from one side to another and back to the first side** material (having two or more oppositely directed electrostatic charging units such that at least one emitter device is configured on each side of **the fibers** so that an electrostatic charge is generated **from opposite directions** transverse to the direction of travel of the **plurality of fibers**) (**see Figs. 7 and 8**), and further that the particular placement and arrangement of electrodes is familiar to the ordinary artisan (see **col. 3, lines 39-44**).

But, as already explained above in Section E of this appeal brief, claim 11 requires at least two electrostatic charging units positioned in an arrangement that is much different than Epstein et al discloses in FIGs. 6, 7 and 8. No two of the Epstein et al electrodes 15, 16, 17 are **opposite** one another in the sense required by applicants' claim 11.

Applicants' claim 11 requires (emphasis added):

> at least one electrostatic charging unit includes an emitter device located upon a first one of the diverging sidewalls and a target device located on the **opposite diverging wall** and a second electrostatic charging unit includes a target device on the first one of the diverging sidewalls and an emitter device on the **opposite diverging sidewall** so that electrostatic charge is generated from **opposite directions** between the diverging sidewalls

Thus, each of the electrostatic charging units in claim 11 has one of its **opposed** components (emitter or target) on the same wall where the other electrostatic charging

unit has its other (target or emitter) component. Accordingly, each **opposed** wall has an emitter from one electrostatic charging unit and a target from the other electrostatic charging unit. The **opposed** components of both electrostatic charging units are separated by **180 degrees**, i.e., they are **opposite** one another.

However, the separation between electrodes 15, 16, 17 in the arrangement disclosed in Epstein et al FIG. 6 is **120 degrees**, and there are **no opposed** targets. The separation between electrodes 15, 16, 17 in the arrangement disclosed in Epstein et al FIG. 7 is linear, and there are **no opposed** targets. There are no Epstein et al electrodes disposed in an **opposing** or **opposite** (**180 degrees**) arrangement as required by applicants' claim 11.

Moreover, Schmit's conditions of the fibers spreading out in the diffusion chamber bear no resemblance to the very precise environmental conditions that the Epstein et al process requires. For the end of Schmit paragraph [0004] in US 2004/0028763 explains (emphasis added):

> Beneath this slot attenuator for attenuating the filaments of the curtain is the diffuser, which is **intended to spread out the incoming curtain**. Since the diffuser diverges or is flared downward, the curtain that passes through it **progressively spreads out** as it falls. The web which thus forms on the collecting conveyor placed beneath the diffuser is thus **more uniform**.

These spreading out conditions in Schmit sharply contrast with the very precise conditions required of Epstein et al's invention described as follows at Epstein et al's column 2, lines (emphasis added):

> **In accordance with the invention**, crimping or deformation of filament 1 in a direction substantially perpendicular to its longitudinal extension is effected by causing filament 1 to pass between a pair of ring-shaped

> electrodes 5, 6 to which electric field pulses are applied by a **voltage determined by the distance between the electrodes** and, therefore, **between electrodes and filament** and also **depending on the thickness, speed, tension and electrical and mechanical structure of the filament** 1 itself.

According to Epstein et al's column 2, lines 23 – 25 it is "also required **in accordance with the invention**, to **maintain filament 1 at the point of crimping under a predetermined tension** * * * ." Emphasis added. The Final Office Action never attempts to explain why the person of ordinary skill might assume it would be possible to control any filament among the mass of filaments spreading out in Schmit to the precise parameters required by Epstein et al's invention. Thus, the person of ordinary skill is not likely to think that Epstein et al's teachings would be applicable to the conditions present in Schmit.

Applicants therefore respectfully submit that claims 11 and 15 are patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al.

1. Claim 15 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al.

Additionally, claim 15 requires the diverging sidewalls to remain **unvented**. However, Schmit appears to vent the diverging sidewalls 14, 15 at openings 16 per Schmit paragraph [0021], lines 2 – 5 and FIG. 2 thereof. In trying to overcome this Schmit deficiency, lines 11 – 13 on page 11 of the Final Office Action contend that (emphasis added):

> With respect to Claim 15, Schmit teaches that the diffusers can have no openings (**unvented) (see [0010]**. Though Schmit states "preferably" with respect to having vents, **this is merely preferred embodiment**.

However, applicants respectfully submit that the way that the Final Office Action would read Schmit paragraph [0010] is not reasonable against the background of Schmit as a whole. Schmit never describes in words nor depicts in drawings, any unvented embodiment. Moreover, Schmit paragraph [0010] in US 2004/0028763 merely states (emphasis added):

> [0010] **Preferably, at least one lateral opening** and **up to five lateral openings** are provided on one of the walls or on both walls of the diffuser. These openings, which extend over the entire length of the diffuser and run to the outside, **make it possible to balance the static pressure** established in the diffuser, thereby preventing the streams of air separating along the walls. These openings may have widths of 3 to 10 mm.

Applicants respectfully submit that Schmit's reference to "preferably" is intended to apply to the number of openings, not to whether there are any openings at all. Applicants' contention is consistent with the additional statement of the opening(s)' function, which is to make it possible to balance the static pressure. Without venting, there can be no balancing of the static pressure. Thus, the March 2009 Final Office Action's contention of "unvented" is not consistent with the Schmit's desire to be able to balance the static pressure. Respectfully, the June 2009 Advisory Office Action failed to offer any counter argument to applicants' assertion that "unvented" contradicts Schmit's desire to be able to balance the static pressure. Applicants therefore respectfully submit that claim 15 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al for this additional reason.

G. Claim 13 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11, and further in view of Trimble.

For the reasons already explained above in Section E of this appeal brief, Maggio '381 in view of Haynes '071 and Epstein et al fail to disclose or suggest to the person of ordinary skill, the placement of multiple electrostatic charge emitters on opposite diverging sidewalls of a diffusion chamber ***in a web forming process*** applied to a streaming volume of fibers moving **en masse** in order to charge individual fibers to make the individual fibers in the mass repel one another and thus separate the fibers and impose a preferential orientation of the fibers. Moreover, as noted above in Section C of this appeal brief, Trimble is not capable of correcting such deficiency. Applicants therefore respectfully submit that claim 13 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11, and further in view of Trimble.

H. Claim 13 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al as applied to claim 11, and further in view of Trimble.

As noted above in Section F of this appeal brief, Schmit in view of Epstein et al as applied to claim 11 fails to disclose or suggest to the person of ordinary skill, the placement of electrostatic charge emitters on opposite diverging sidewalls. As further noted above in Section C of this appeal brief, Trimble fails to overcome this deficiency. Applicants therefore respectfully submit that claim 13 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al as applied to claim 11, and further in view of Trimble.

I. Claim 14 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11 and further in view of Haynes '379.

Claim 14 requires the **pneumatic attenuation force** to be provided by **perturbed attenuation air**. The specific contentions in the last two complete paragraphs of page 13 of the March 2009 Final Office Action are that (emphasis added):

> **Haynes '379 teaches** using a **bar arrangement 10 in front of airflow, which causes turbulent** (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).
>
> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine **Haynes '379's bar arrangement in front of the air flow of the** Maggio '381 **in order to quench or cool** via better penetration of the gas among the filaments (see Haynes '379, col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

As noted above in Section E of this appeal brief, Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11 fail to disclose or suggest to the person of ordinary skill, the placement of electrostatic charge emitters on opposite diverging sidewalls. Haynes '379 fails to overcome this deficiency of the placement of electrostatic charge emitters on opposite diverging sidewalls. As further noted above in Section D of this appeal brief in connection with Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, Haynes '379 fails to overcome this deficiency of rendering the **pneumatic attenuation air** turbulent, which is what is required by claim 14. Applicants therefore respectfully submit that claim 14 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Epstein et al as applied to claim 11 and further in view of Haynes '379.

J. Claims 14 and 16 are patentable under 35 U.S.C. 103(a) over Schmit and Epstein et al as applied to claim 11 and further in view of Haynes '379.

For the reasons explained above in Section F of this appeal brief, the combination of Schmit and Epstein et al as applied to claim 11 is deficient in disclosing or suggesting the placement of electrostatic charge emitters on opposite diverging sidewalls. Haynes '379 fails to overcome this deficiency of the placement of electrostatic charge emitters on opposite diverging sidewalls.

Each of claims 14 and 16 depends on claim 11, and therefore applicants respectfully submit that claims 14 and 16 are patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al for at least the same reasons expressed above regarding claim 11.

1. Claim 14 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al as applied to claim 11, and further in view of Haynes '379.

Claim 14 requires the **pneumatic attenuation force** to be provided by **perturbed attenuation air**. As shown in Fig. 1 and explained in paragraph 0029 on page 4 of applicants' published application (US 2005/0087287) (emphasis added):

> A **fiber drawing unit** or aspirator 70 to receive the quenched curtain or bundle of fibers is **positioned below** the spinneret 50 and the **quench blower 64**.

The specific contentions in the third and fourth complete paragraphs of page 14 of the March 2009 Final Office Action are that (emphasis added):

> Haynes '379 teaches using a **bar arrangement 10 in front of airflow, which causes turbulent** (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).
>
> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine **Haynes '379's bar arrangement in front of the air flow of the slot of Schmit in order to quench or cool** via better

> penetration of the gas among the filaments (see Haynes '379, col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

Haynes '379 does not supply this missing element to the Schmit arrangement. For the Haynes '379 patent pertains to rendering the **quenching air** turbulent. Haynes '379 col. 5, lines 18-27 states (emphasis added):

> The bars 12 are preferably substantially parallel to each other, and are preferably positioned substantially perpendicular to the direction of travel of nonwoven filaments **being quenched**.

The Haynes '379 patent does not pertain to rendering the **pneumatic attenuation air perturbed**, which is what is required by claim 14. The quenching or cooling of the fibers is intended to remove heat. In contrast to the quenching air, the attenuation air draws the lengths of the fibers to reduce the diameters of the fibers as the fibers lengthen. Thus, Haynes '379 has no applicability to **perturbing attenuation air** that supplies the pneumatic attenuation force as required by applicants' claim 14.

Additionally, to the person of ordinary skill, applying the Haynes '379 teaching of a bar arrangement 10 in order to cause turbulent gas flow in Schmit's method would seem likely to preclude the achievement of the Schmit objective of **progressively spreading out** the curtain of fibers so that the web that forms on the collecting conveyor is "thus more uniform." For introducing turbulence into the air that moves the fibers would not appear likely to the person of ordinary skill to promote a **progressive** spreading out of the fibers to achieve a **more uniform web**. This apparent contradiction is all the more reason for concluding that the method of applicants' claim 14 is non-obvious to the person of ordinary skill. And as noted above, a combination or

modification of references that directly contradicts the intended purpose of the primary reference (in this case Schmit) is improper. M.P.E. P. § 2143.01.

Applicants therefore respectfully submit that for these additional reasons, claim 14 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al as applied to claim 11, and further in view of Haynes '379.

2. Claim 16 is patentable under 35 U.S.C. 103(a) over Schmit in view of Epstein et al as applied to claim 11, and further in view of Haynes '379.

Claim 16 requires at least one of the **diverging sidewalls** to comprise at least one **vortex generator**. However, Haynes '379 does not say anything about making a **diverging** sidewall become a **vortex generator**. Indeed, as to claim 16, Haynes '379 FIG. 3 shows the vortex generating arrangements 10 as converging rather than diverging. For the further reasons explained above in Section D, subsection 2, of this appeal brief in connection with Haynes '071 in view of Maggio '134 and Epstein et al as applied to claim 1, Haynes '379 does not overcome this deficiency about making a **diverging** sidewall comprise at least one **vortex generator**.

Applicants therefore respectfully submit that claim 16 is patentable under 35 U.S.C. 103(a) over Schmit and Epstein et al as applied to claim 11 and further in view of Haynes '379 for this additional reason.

K. Claim 23 is patentable under 35 U.S.C. 103(a) over Maggio '134 in view of Davis et al.

In the method of making a nonwoven web according to independent claim 23, the fibers are subjected to a pneumatic attenuation force **in a drawing slot formed between opposed drawing slot sidewalls**. The fibers also are subjected to an applied electrostatic charge by **an electrostatic charging unit located on one of the drawing**

slot sidewalls.

With respect to claim 23, lines 8 – 13 on page 15 of the March 2009 Final Office Action contend (emphasis added):

> Maggio '134 teaches providing a plurality of fibers F, subjecting the fibers to an attenuation force in a drawing slot (**at Fig. 3, Ref. No. 13**), subjecting the fibers to a **electrostatic charging unit 11** located on the sidewall, reducing the velocity of the fibers in a diffusion chamber being formed substantially between diverging sidewalls 15, and collecting the fibers onto a web of a moving surface 7.

However, Maggio '134 does not have an electrostatic charging unit on one of the sidewalls **of the drawing slot F**. Instead, Maggio '134's **rail 11 for electrostatically charging the filaments is** at the end of the rectilinear slot 20 that is **downstream of the outlet of the drawing slot F**. As explained at Maggio '134 column 5, lines 31 – 47, Maggio '134's **rail 11 is integrated inside the diffuser 10 at the end of the rectilinear slot 20** (emphasis added):

> **FIG. 3 illustrates a second embodiment** of the assembly 6 for opening and distributing a bundle of filaments in the form of a web produced in accordance with the invention.
>
> In this variant, using the same references as those employed to describe the example illustrated by FIG. 2, the assembly 6 for opening and distributing the bundle of filaments 3 is, as before, separated from the drawing assembly 5.
>
> This embodiment also comprises an inlet zone 13 in the form of a convergent nozzle extending **opposite the outlet of the drawing slot "F"**. This inlet zone 13 in the form of a convergent nozzle is connected to the two walls 15 of the divergent zone by **a rectilinear slot 20.**
>
> **The rail 11 for electrostatically charging the filaments is, in this embodiment, integrated inside the diffuser 10 at the end of the rectilinear slot 20** immediately upstream of the divergent zone 15.

Thus, the Maggio '134 electrostatic charging unit (**rail 11**) is only disposed

beneath the **drawing slot "F"** or **in the diffuser 10**, but **not in the slot F**. Accordingly, this rejection lacks an element of claim 23 and therefore fails to present a prima facie case under Section 103(a) and is deficient on this basis alone.

Though claim 23 requires the fibers to be subjected to the attenuation force in a drawing slot formed between opposed drawing slot sidewalls, lines 8-11 on page 19 of the March 2009 Final Office Action contend:

> The air is provided above the diverging walls in Maggio '134, and the slowing occurs between the diverging walls (see col. 5, lines 44-48). Thus, the slot of fast-moving air above the diverging walls would continue to pull the filaments. Thus, Maggio's providing of air necessarily occurs within a drawing slot.

Here the Final Office Action would seem to be re-interpreting the reference to suit the rejection. However, Maggio '134 expressly contradicts this contention of the Final Office Action by stating, as noted above, "This embodiment also comprises an inlet zone 13 in the form of a convergent nozzle extending opposite the outlet of the drawing slot 'F'".

In the method of making a nonwoven web according to independent claim 23, the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot from the drawing slot side wall that opposes the drawing slot side wall upon which the electrostatic charging unit is located.

Concerning its reliance upon the Davis et al disclosure, lines 17 – 19 on page 15 of the March 2009 Final Office Action contend:

> Davis teaches providing air from a nozzle to direct filaments with one air nozzle (attenuation air only entering the drawing slot from one slot sidewall) (see col. 1, lines 37-51).

However, Davis et al column 1, lines 37 – 51 states (emphasis added):

> In a first embodiment, the present invention is directed to a draw jet for drawing thermoplastic polymer filaments comprising a drawing slot defined by an entrance member comprising a converging passageway communicating with a continuing passageway, terminating at an outlet portion, a drawing member comprising an inlet portion having a drawing gap width of about 2.0 to about 10 mm communicating with said outlet portion of said entrance member, and **at least one air nozzle for directing high speed air onto said filaments in a downstream direction** positioned between said outlet portion of said entrance member and said inlet portion of said drawing member, and with a nozzle gap width wherein the gap ratio of said drawing gap width to the combined width of all of said nozzle gaps is from about 1.0 to about 10.

This Davis et al disclosure of **one air nozzle for directing high speed air onto said filaments in a downstream direction** is an additional source of air to supply the pneumatic attenuation force. Moreover, this Davis et al disclosure of an air nozzle is **NOT** directing air to enter the drawing slot **from the drawing slot side wall that opposes the drawing slot side wall upon which the electrostatic charging unit is located**.

The paragraph that bridges pages 15 and 16 of the March 2009 Final Office Action contends (emphasis added):

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Davis's attenuation air supply configuration from a slot sidewall with Maggio '134's teaching of attenuation in order to minimize costs of supplied plant air and to minimizing non-uniformity in the laydown process (see Davis, col. 1, lines 14-34). Moreover, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine **Davis's use of the attenuation to direct the filaments** (see Davis, col. 1, lines 37-51) with the air **toward Maggio's electrostatic charging unit 11** because Davis provides additional direction control to achieve Maggio's process of

subjecting the filaments to the charging unit 11.

Davis et al does not include an electrostatic charging unit and thus cannot suggest an orientation of its air nozzle 32 with respect to an electrostatic charging unit.

Moreover, as shown in Davis et al's only figure, FIG. 1, the air nozzle 32 is directed toward plate 26, which forms part of a diverging passage. As explained at Davis et al column 3, lines 29 – 35 (emphasis added):

> **Drawing passageway 24 defines a divergence angle with either one or both of plates 26 and 28 diverging away from the axial alignment of slot 4.** The divergence angle is preferably from about 0.0 to about 5 degrees, more preferably from about 0.1 to about 3 degrees, and most preferably from about 0.2 to about 1 degree.

Thus, notwithstanding the misleading terminology in Davis et al, it is apparent that the Davis et al nozzle 32 is used in the **diffuser portion** of the Davis et al apparatus, **not in the slot** as that term slot must be interpreted as it is used in applicants' specification and claim 23. Thus, Davis et al does not suggest an orientation of its air nozzle 32 that provides attenuation air **to the slot** in any respect.

Furthermore, the Final Office Action's above-stated contention that the person of ordinary skill would direct Davis et al's air nozzle 32 **toward Maggio '134's electrostatic charging unit 11** does not stand the test of reasonableness. Davis et al's air nozzle 32 "directs **high speed air** onto filaments in slot 4 in a **downstream direction**." Davis et al, col. 3, lines 38-39. The supply pressure of Davis et al's air nozzle 32 is from about 140 kPa (chart at the end of Example 3) to about 420 kPa (chart at the end of Example 2). Maggio '134's electrostatic charging unit 11 is disposed well distant from Maggio '134's drawing slot F. By the time a high speed air stream blasted from Davis et al's air nozzle 32 at these sorts of pressures in the confined space

between Maggio '134's drawing slot F arrived downstream where Maggio '134's electrostatic charging unit 11 is disposed, the air would not retain any directional component other than movement in the axial direction, which is not directed at Maggio '134's electrostatic charging unit 11. Thus, the motivation offered by the Final Office Action for combining Davis et al's air nozzle 32 in the desired orientation with respect to Maggio '134's electrostatic charging unit 11 presumes an ignorance of the laws of fluid dynamics on the part of the person of ordinary skill.

Concerning its reliance upon the Davis et al disclosure, the March 2009 Final Office Action contends at page 19 thereof:

> 9) Absent evidence of record to the contrary, Davis is relied upon for all of its teachings. The arguments of counsel cannot take the place of evidence in the record.

However, no evidence in the record supports the implicit contention of the Final Office Action that the person of ordinary skill would read the Davis et al disclosure and the Maggio '134 disclosure as the Final Office Action would have it be read. This fact is especially telling, when the reading offered by the March 2009 Final Office Action is less plausible than the reading proffered by applicants.

In view of the deficiencies noted above, the attempt to combine Maggio '134 and Davis et al fails to constitute a prima facie rejection under Section 103(a).

Applicants therefore respectfully submit that claim 23 is patentable under 35 U.S.C. 103(a) over Maggio '134 in view of Davis et al.

Conclusion

For the reasons explained above, applicants respectfully submits that claims 1 – 5, 11, 13 – 16, and 23 are patentable in accordance with the relevant provisions of the statute, the rejections should be reversed, and claims 1 – 5, 11, 13 – 16, and 23 should be allowed to issue in a patent.

8. CLAIMS APPENDIX:

1. (Previously presented) A method of making a nonwoven web, the method comprising:

a) providing a plurality of fibers;

b) subjecting the fibers to a pneumatic attenuation force in a drawing slot, the attenuation force imparting a velocity to the fibers;

c) reducing the velocity of the fibers in a diffusion chamber that is spaced from an exit of the drawing slot in a direction of travel of the plurality of fibers, the diffusion chamber being formed substantially between opposed diverging sidewalls;

d) subjecting the fibers to an applied electrostatic charge before the fibers enter the diffusion chamber, wherein the electrostatic charge is applied by two or more oppositely directed electrostatic charging units with each charging unit including an emitter device and a target device such that at least one emitter device is configured on each side of the fibers so that an electrostatic charge is generated from opposite directions transverse to the direction of travel of the plurality of fibers; and thereafter

e) collecting the fibers into a web on a moving forming surface.

2. (Previously Presented) The method of Claim 1 wherein the electrostatic charging units are in a staggered configuration.

3. (Original) The method of Claim 1 wherein the opposed diverging sidewalls are unvented.

4. (Original) The method of Claim 1 wherein the pneumatic attenuation force is provided by perturbed attenuation air.

5. (Original) The method of Claim 1 wherein at least one of the opposed diverging sidewalls comprises at least one vortex generator.

6. (Withdrawn) An apparatus for forming a nonwoven web comprising:

a) a source of fibers;

b) a fiber drawing slot formed between opposed slot sidewalls;

c) a diffusion chamber formed substantially between opposed diverging sidewalls, the diffusion chamber located below the drawing slot;

d) two or more oppositely directed electrostatic charging units located above the diffusion chamber; and

e) a forming surface for collecting the fibers as a nonwoven web.

7. (Withdrawn) The apparatus of Claim 6 wherein at least one electrostatic charging unit is located substantially closer to the diffusion chamber than at least one other electrostatic charging unit.

8. (Withdrawn) The apparatus of Claim 6 wherein the opposed diverging sidewalls are unvented.

9. (Withdrawn) The apparatus of Claim 6 further comprising a means for providing perturbed attenuating air to the drawing slot.

10. (Withdrawn) The apparatus of Claim 6 wherein at least one of the opposed diverging sidewalls comprises at least one vortex generator.

11. (Previously presented) A method of making a nonwoven web, the method comprising:

a) providing a plurality of fibers;

b) subjecting the fibers to a pneumatic attenuation force in a drawing slot, the attenuation force imparting a velocity to the fibers;

c) reducing the velocity of the fibers in a diffusion chamber, the diffusion chamber being formed substantially between opposed diverging sidewalls;

d) subjecting the fibers to and charging the fibers with an applied electrostatic charge while the fibers are in the diffusion chamber, the electrostatic charge being applied by two or more oppositely directed electrostatic charging units wherein at least one electrostatic charging unit includes an emitter device located upon a first one of the diverging sidewalls and a target device located on the opposite diverging wall and a second electrostatic charging unit includes a target device on the first one of the diverging sidewalls and an emitter device on the opposite diverging sidewall so that electrostatic charge is generated from opposite directions between the diverging sidewalls with respect to the direction of travel of the plurality of fibers through the diversion chamber; and thereafter

e) collecting the fibers into a web on a moving forming surface.

12. (Canceled)

13. (Previously Presented) The method of Claim 11 wherein at least one electrostatic charging unit is located substantially closer to the drawing slot than at least one other electrostatic charging unit.

14. (Original) The method of Claim 11 wherein the pneumatic attenuation force is provided by perturbed attenuation air.

15. (Previously Presented) The method of Claim 11 wherein the opposed diverging sidewalls are unvented.

16. (Original) The method of Claim 11 wherein at least one of the opposed diverging sidewalls comprises at least one vortex generator.

17. (Withdrawn) An apparatus for forming a nonwoven web comprising:

a) a source of fibers;

b) a fiber drawing slot formed between opposed slot sidewalls;

c) a diffusion chamber formed substantially between opposed diverging sidewalls, the diffusion chamber located below the drawing slot;

d) at least one electrostatic charging unit located upon one of the diverging sidewalls of the diffusion chamber; and

e) a forming surface for collecting the fibers as a nonwoven web.

18. (Withdrawn) The apparatus of Claim 17 wherein the opposed diverging sidewalls are unvented.

19. (Withdrawn) The apparatus of Claim 17 comprising two or more oppositely directed electrostatic charging units, wherein at least one electrostatic charging unit is located upon each of the diverging sidewalls.

20. (Withdrawn) The apparatus of Claim 19 wherein at least one electrostatic charging unit is located substantially closer to the drawing slot than at least one other electrostatic charging unit.

21. (Withdrawn) The apparatus of Claim 17 further comprising a means for providing perturbed attenuating air to the drawing slot.

22. (Withdrawn) The apparatus of Claim 17 wherein at least one of the opposed diverging sidewalls comprises at least one vortex generator.

23. (Previously presented) A method of making a nonwoven web, the method comprising:

a) providing a plurality of fibers;

b) subjecting the fibers to a pneumatic attenuation force in a drawing slot formed between opposed drawing slot sidewalls, the attenuation force imparting a velocity to the fibers;

c) subjecting the fibers to an applied electrostatic charge, the electrostatic charge applied by an electrostatic charging unit located on one of the drawing slot sidewalls;

d) reducing the velocity of the fibers in a diffusion chamber, the diffusion chamber being formed substantially between opposed diverging sidewalls; and thereafter

e) collecting the fibers into a web on a moving forming surface;

wherein the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.

9. Evidence Appendix:

None.

10. Related Proceedings Appendix:

None.

Respectfully submitted,

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